

# Hitachi IJ Printer PXR Series



Compliance with the RoHS Directive

With the PXR series, the amount of raw materials that affect the environment have been reduced, and the guidelines as set forth in the RoHS directive as issued by the European Union have been followed.

\* The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

Eco-friendliness and Sanitary

Varieties of ink types "Chrome-complex dye free ink and ethanol based ink"

The printer uses the stainless enclosure body that is sanitary, robust and rust resistant, which conforms to the IP55 international safety standards for dust-proof, drip-proof devices.

The world's fastest, most comprehensive top-level high-speed printer.

Maximum print speed 345 m/min (Font 5x5, 1 Line, Character pitch 1.5mm)

Large Panel

10.4-inch large TFT liquid crystal touch-panel display.

Bright, easy-to-see and wide viewing angle.

The menu select system offers users exceptional ease and simplicity of use.

Memory Card

A commonly available memory card can be used to store the copied "registered character data" and "print data".

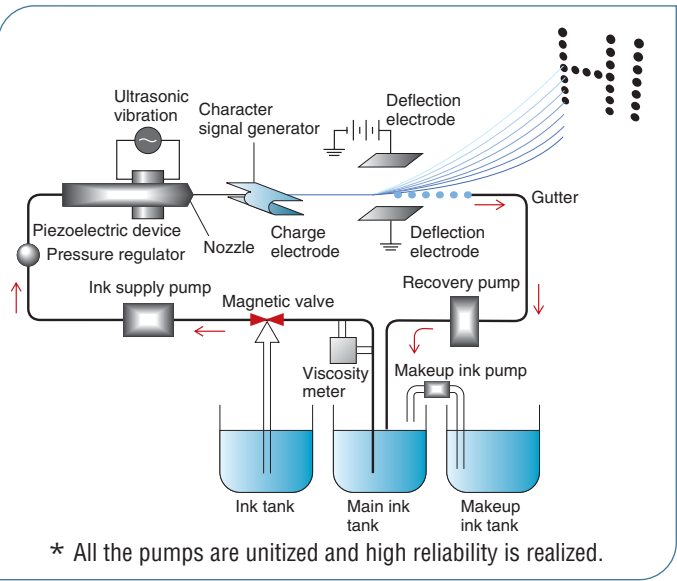
Uses the PC Card (Flash ATA Type II (8MB or above))

Principles of the Inkjet Printer

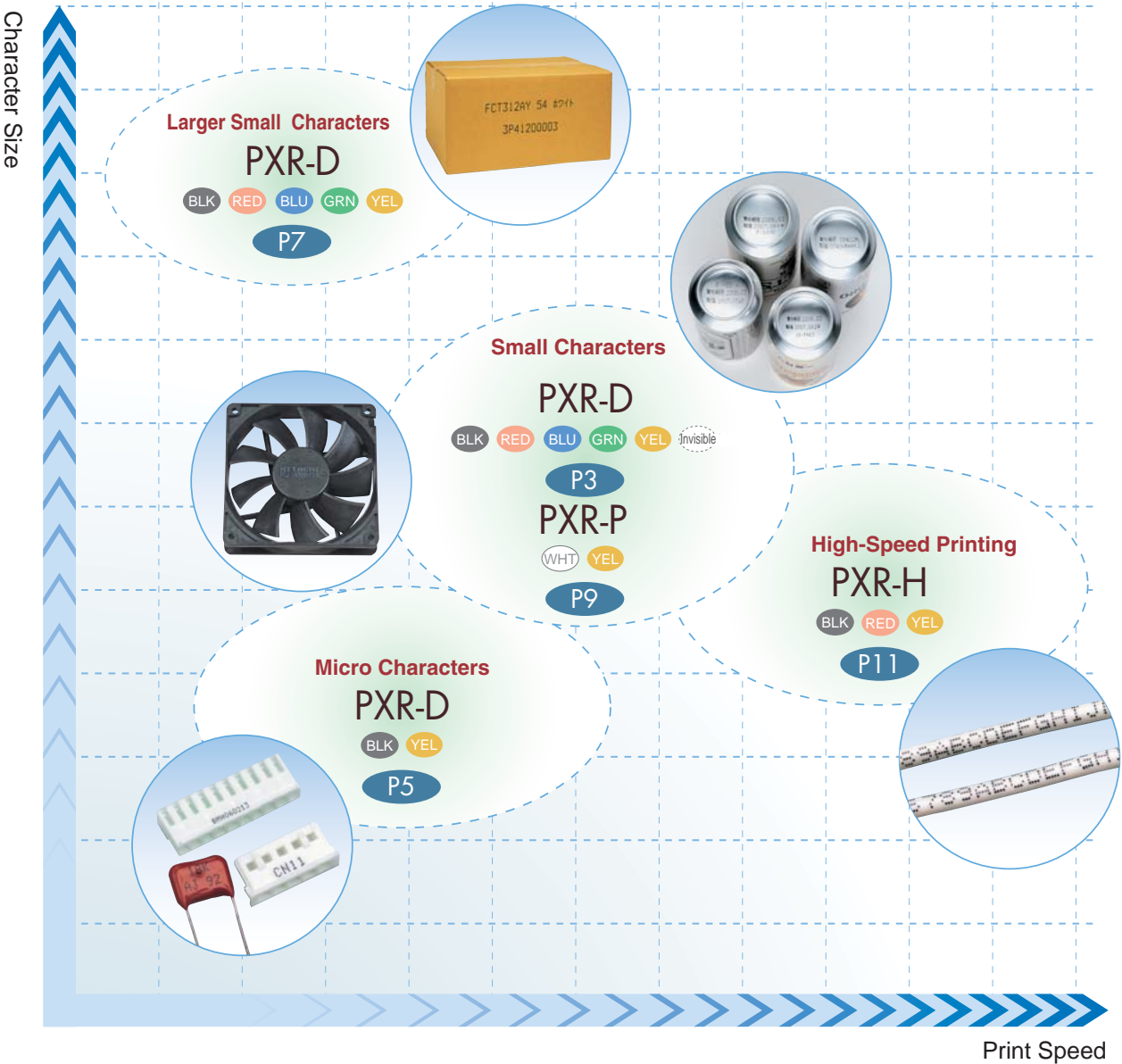
The ink pulled from the ink reservoir by the supply pump is set to specified pressure by a regulator, and supplied to the nozzle. The ink is ejected from the nozzle and is subjected to vibrations by the piezoelectric device to create ink droplets. The ink droplets are charged at the charge electrode to create pixels. When the charged ink droplets pass through the deflection electrode, they will be deflected in the vertical direction in a quantity determined by the traveling speed and amount of charges applied to each droplet. As the object to be printed on moves in horizontal direction by a conveyor, characters will be printed. The ink droplets that are not used for printing are caught by the gutter and recovered into the main ink tank by the recovery pump. Ink used for printing is supplied from the main ink tank. Makeup ink is also supplied to the main ink tank to keep the fluid density constant. The inkjet printer runs best when maintaining optimum density control.



Viewing angle is drastically increased



IJ Printer Selection Guide



Product Lineups



PXR-D 65 μm

PXR-D 40 μm

PXR-D 100 μm

PXR-P 65 μm

PXR-H 55 μm

Software Options  
Application Examples

Ink Variation



# PXR-D for Small Characters

These models are suitable for wide variety of applications: food, beverage, cosmetics and pharmaceutical products.

### Main Features

Various ink types and color inks can be used.  
Wide operating temperature.  
0 to 113 F/45 °C (JP-K67 and JP-K69)



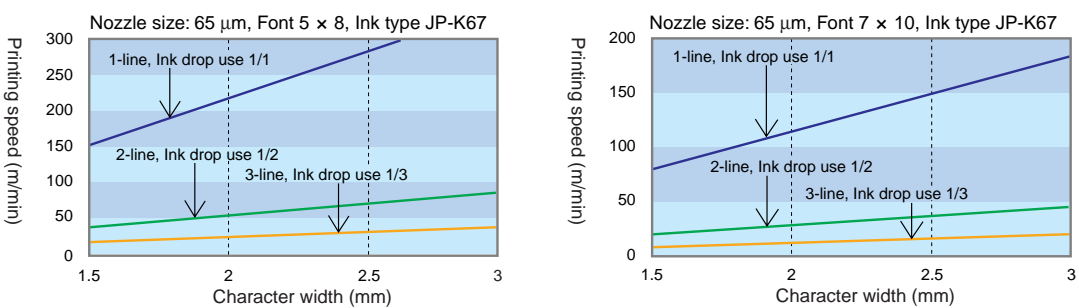
### Marking Examples



### Printing Samples (Full Scale)

Font		PXR-D260W				PXR-D460W			
PXR-D260W	5×5	1 LINE	0123456789ABCDEF6H	2 LINE	012345678	3 LINE	012345678	4 LINE	012345678
			012345678		ABCDEFGHI		ABCDEFGHI		JKLMNOPQR
	5×7	1 LINE	0123456789ABCD	2 LINE	012345678	3 LINE	012345678	4 LINE	012345678
			0123456		ABCDEFGHI		ABCDEFGHI		JKLMNOPQR
	7×10	1 LINE	0123456789	2 LINE	01234567	3 LINE	0123456789012345678		ABCDEFGHIJKL
PXR-D460W	12×16	1 LINE	0123456789ABC					2 LINE	01234
			0123456						ABCDE
	18×24	1 LINE	0123456789						
			0123456789ABCDE						
	24×32	1 LINE	0123456789ABCDEF						

### Printing speed



### Standard Specifications

Printing specifications			
Model	PXR-D260W PXR-D260WL		PXR-D460W PXR-D460WL
Nozzle size	65 μm		65 μm
Max. print line number	Up to 2 Lines		Up to 4 Lines
Maximum number of print characters (each line)	1 Line: Up to 240 characters 2 Line: Up to 120 characters		1 Line: Up to 240 characters    2 Line: Up to 120 characters 3 Line: Up to 80 characters    4 Line: Up to 60 characters
Dot matrix (horizontal × vertical)	1–2 Line: 5 × 5, 5 × 8 (or 5 × 7), 7 × 10 (or 9 × 7, 9 × 8) 1 Line:12 × 16		1–4 Line: 5 × 5, 5 × 8 (or 5 × 7) , 9 × 8 (or 9 × 7) 1–3 Line: 7 × 10 1–2 Line:12 × 16, 1 Line: 18 × 24, 24 × 32
Character height	0.08–0.39 inches / 2–10 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), backlight provided Input Device: Touch panel, input sound provided		
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic, Serbian, Turkish, Hungarian and Bulgarian available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 2,296		
Standard characters	Alphanumeric (A–Z, a–z, 0–9), symbols (27), space: Total 90		
Number of user pattern registration	Each dot matrix 128 patterns		
Print functions	Calendar, Counter, Message storage (150 messages), Font mixture, Passwords security, Bar codes (code39, ITF, NW-7, EAN13/UPC-A, Code128/EAN128), Data Matrix 2-D code (Alphabet : 49 characters, Numerals: 98 characters), Encoder function, Reciprocation printing, etc.		
Input signal	Print target detection, Printing stop, Reciprocatve printing, Rotary encoder pulse		
Output signal	Print ready, Fault, Warnig, Print in progress or print end, Online		
Data interface	RS-232C at baud rates selectable up to 38.4 kbps		
General specifications			
Operating temperature range	32–113 °F / 0–45 °C (JP-K67, K69 Ink)		
Humidity range	30–90 % R.H. (no condensation) Note: When humidity is more than 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100–120 / 220–240V ± 10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable length	13.1 ft / 4 m
Approval	CE, UL, cUL, C-Tick	Overall size (width × depth × height)	15.7 × 11.4 × 20.3 inches 400 × 290 × 515 mm
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg

Dimensions		
Console	Printhead : PXR - D*60W	90 Degree Printhead : PXR - D*60WL

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# PXR-D for Micro Characters

These models are suitable for small markings, such as on small components, wire, etc. in the electric and electronic fields.

## Main Features

Printing on products with extremely small marking areas is possible.  
These models are suitable for printing on small components.



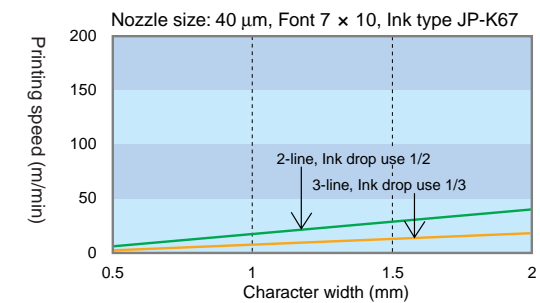
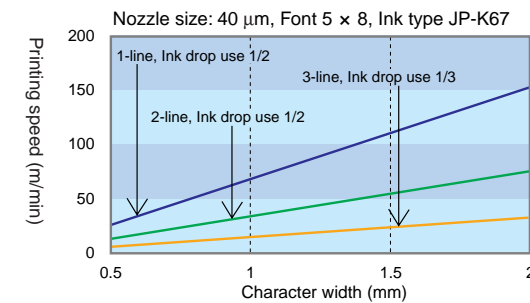
## Marking Examples



## Printing Samples (Full Scale)

Font		PXR-D240W				PXR-D440W	
PXR-D240W	5×5	1 LINE 0123456789ABCDEFGHIJKL	2 LINE 0123456789ABCDEFGHIJ KLMNOPQRSTUVWXYZ	3 LINE 0123456789ABCDEFGHI JKLMNOPQRSTUVWXYZ 0123456789ABCDEFGHI	4 LINE 0123456789ABCDEFGHI JKLMNOPQRSTUVWXYZ 0123456789ABCDEFGHI JKLMNOPQRSTUVWXYZ		
	5×7	1 LINE 0123456789ABCDEF6H	2 LINE 0123456789ABCDEF6H IJKLMNOPQRSTUVWXYZ	3 LINE 0123456789ABCDEF6H IJKLMNOPQRSTUVWXYZ 0123456789ABCDEF6H	4 LINE 0123456789ABCDEF6H IJKLMNOPQRSTUVWXYZ 0123456789ABCDEF6H IJKLMNOPQRSTUVWXYZ		
	7×10	1 LINE 0123456789ABCD	2 LINE 0123456789ABCD EFGHIJKLMNOPQR	3 LINE 012345678901234567890123456789 ABCD EFGHIJKLMNOPQR ABCD EFGHIJKLMNOPQRSTUVWXYZ			
	12×16	1 LINE 0123456789ABCDEFG	2 LINE 0123456789 ABCDEFGHIJ				
PXR-D440W	18×24	1 LINE 0123456789ABCDE					
	24×32	1 LINE 0123456789A					

## Printing speed



## Standard Specifications

Printing specifications			
Model	PXR-D240W		PXR-D440W
Nozzle size	40 μm		
Max. print line number	Up to 2 Lines		Up to 4 Lines
Maximum number of print characters (each line)	1 Line: Up to 240 characters 2 Line: Up to 120 characters		1 Line: Up to 240 characters    2 Line: Up to 120 characters 3 Line: Up to 80 characters    4 Line: Up to 60 characters
Dot matrix (horizontal × vertical)	1–2 Line: 5 × 5, 5 × 8 (or 5 × 7), 7 × 10 (or 9 × 7, 9 × 8) 1 Line:12 × 16		1–4 Line: 5 × 5, 5 × 8 (or 5 × 7) , 9 × 8 (or 9 × 7) 1–3 Line: 7 × 10 1–2 Line: 12 × 16, 1 Line: 18 × 24, 24 × 32
Character height	0.04 – 0.12 inches / 1 – 3 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), backlight provided Input Device: Touch panel, input sound provided		
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic, Serbian, Turkish, Hungarian and Bulgarian available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 1,514		
Standard characters	Alphanumeric (A–Z, a–z, 0–9), symbols (27), space: Total 90		
Number of user pattern registration	Each dot matrix 128 patterns		
Print functions	Calendar, Counter, Message storage (150 messages), Font mixture, Passwords security, Bar codes (code39, ITF, NW-7, EAN13/UPC-A, Code128/EAN128), Data Matrix 2-D code (Alphabet : 49 characters, Numerals: 98 characters), Encoder function, Reciprocation printing, etc.		
Input signal	Print target detection, Printing stop, Reciprocatave printing, Rotary encoder pulse		
Output signal	Print ready, Fault, Warnig, Print in progress or print end, Online		
Data interface	RS-232C at baud rates selectable up to 38.4 kbps		
General specifications			
Operating temperature range	32–95 °F / 0–35 °C (JP-K67, K69 Ink)		
Humidity range	30–90 % R.H. (no condensation) Note: When humidity is more than 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100–120 / 220–240V ± 10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable length	13.1 ft / 4 m
Approval	CE, UL, cUL, C-Tick	Overall size (width × depth × height)	15.7 × 12.4 × 20.3 inches 400 × 315 × 515 mm
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg

Dimensions	
Console	Printhead : PXR - D*40W

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# PXR-D for Larger Small-size Characters

The model is suitable for printing large characters on cartons, woods and buildings.

## Main Features

The largest printing characters and print distance can be made among PXR series.  
Fast dry and high adhesion inks can be used with this model.



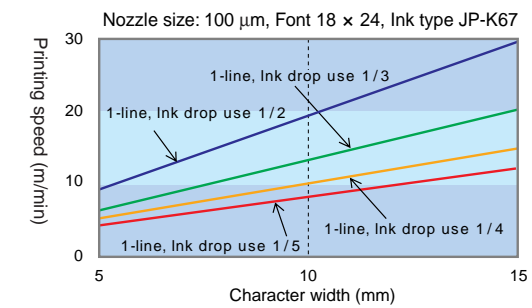
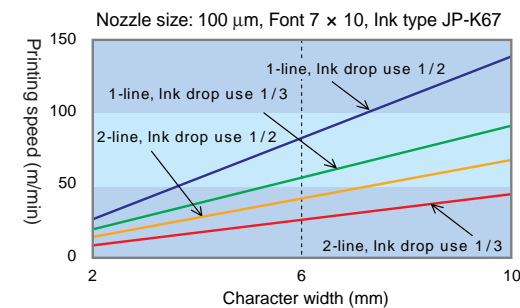
## Marking Examples



## Printing Samples (Full Scale)

Font	PXR-D410W	
	Standard	Bold
7 × 10	0123456789ABCDE	0123456789ABCDE
	0123456789ABCDE	0123456789ABCDE
12 × 16	01234ABCD	01234ABCD
	012ABC	012ABC
18 × 24	012ABCD	012ABCD
	012ABC	012ABC
24 × 32	012AB	012AB
	012AB	012AB

## Printing speed



## Standard Specifications

Printing specifications			
Model	PXR-D410W		
Nozzle size	100 μm		
Max. print line number	Up to 4 Lines		
Maximum number of print characters (each line)	1 Line: Up to 240 characters    2 Line: Up to 120 characters 3 Line: Up to 80 characters    4 Line: Up to 60 characters		
Dot matrix (horizontal × vertical)	1-4 Line: 5 × 5, 5 × 8 (or 5 × 7) , 9 × 8 (or 9 × 7) 1-3 Line: 7 × 10 1-2 Line: 12 × 16, 1 Line: 18 × 24, 24 × 32		
Character height	0.12 – 0.59 inches / 3 – 15 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), backlight provided Input Device: Touch panel, input sound provided		
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic, Serbian, Turkish, Hungarian and Bulgarian available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 468		
Standard characters	Alphanumeric (A–Z, a–z, 0–9), symbols (27), space: Total 90		
Number of user pattern registration	Each dot matrix 128 patterns		
Print functions	Calendar, Counter, Message storage (150 messages), Font mixture, Passwords security, Bar codes (code39, ITF, NW-7, EAN13/UPC-A, Code128/EAN128), Data Matrix 2-D code (Alphabet : 49 characters, Numerals: 98 characters), Encoder function, Reciprocation printing, etc.		
Input signal	Print target detection, Printing stop, Reciprocatave printing, Rotary encoder pulse		
Output signal	Print ready, Fault, Warnig, Print in progress or print end, Online		
Data interface	RS-232C at baud rates selectable up to 38.4 kbps		
General specifications			
Operating temperature range	32–95 °F / 0–35 °C (JP-K67, K69 Ink)		
Humidity range	30–90 % R.H. (no condensation) Note: When humidity is more than 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100–120 / 220–240V ± 10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable length	13.1 ft / 4 m
Approval	CE, UL, cUL, C-Tick	Overall size (width × depth × height)	15.7 × 12.4 × 20.3 inches 400 × 315 × 515 mm
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg

Dimensions	
Console	Printhead

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# PXR-P for Pigmented Ink

The model is suitable for various dark color surfaces.

## Main Features

Whiteness and adhesion strength are improved by newly developed white-pigmented ink. New ink circulation system is sure to stir the pigment particles.

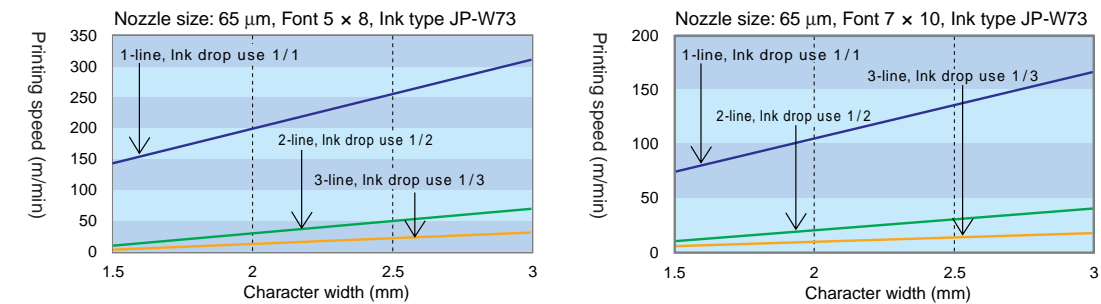
## Marking Examples



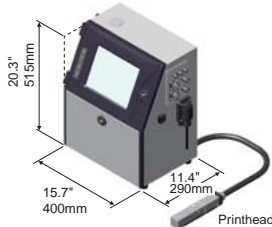
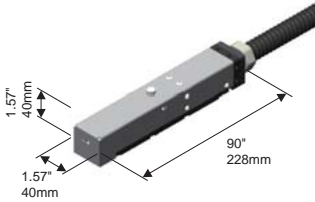
## Printing Samples (Full Scale)

Font	PXR-P460W			
5×5	1 LINE 0123456789A	2 LINE 01234 KLMNO	3 LINE 012345 ABCDEF NOPQRS	4 LINE 0123456789A BCDEFGHIJ KLMNOPQRS TUVWXYZ
5×7	1 LINE 01234567	2 LINE 01234 KLMNO	3 LINE 012345 ABCDEF NOPQRS	4 LINE 0123456789A BCDEFGHIJ KLMNOPQRS TUVWXYZ
7×10	1 LINE 012345	2 LINE 0123 KLMN	3 LINE 0123456789 ABCDEFGHIJ KLMNOPQRST	
12×16	1 LINE 0123456789ABCDEFGHIJ	2 LINE 01234 ABCDE		
18×24	1 LINE 0123456789ABCDEFGHIJ			
24×32	1 LINE 0123456789ABCDEFGHIJ			

## Printing speed



## Standard Specifications : Nozzle size 65μm

Printing specifications			
Model	PXR-P460W		
Nozzle size	65 μm		
Max. number of lines	Up to 4 Lines		
Maximum number of Characters per line	1 Line : Up to 240 characters    2 Line : Up to 120 characters 3 Line : Up to 80 characters    4 Line : Up to 60 characters		
Dot matrix (Horizontal × vertical)	1-4 Line : 5 × 5, 5 × 8 (or 5 × 7), 9 × 8 (or 9 × 7) 1-3 Line : 7 × 10 1-2 Line : 12 × 16 1 Line : 18 × 24, 24 × 32		
Character height	0.08 – 0.39 inches / 2–10 mm		
Display & input device	Display : TFT LCD (10.4 inch, color), backlight provided Input Device : Touch panel, confirmation beep		
Screen language 2 language selectable	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic, Serbian, Turkish, Hungarian and Bulgarian available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 2,083		
Standard characters	Alphanumeric (A–Z, a–z, 0–9), symbols (27)    space : Total 90		
Number of logos / special character storage	Up to 128		
Print functions	Calendar, Counter, Message storage (150 messages), Font mixture, Passwords security, Bar codes (Code 39, ITF, NW-7, EAN13 / UPC-A, Code 128 / EAN128), Data Matrix 2-D code (Alphabet : 49 characters, Numerals: 98 characters), Encoder Function, Reciprocation printing, etc.		
Input signals	Print target detection, Printing stop, Reciprocative printing, Rotary encoder pulse		
Output signals	Print ready, Fault, Warning, Print in progress or Print completed, Online		
Serial interface	RS-232C at baud rates selectable up to 38.4 kbps		
General specifications			
Operating temperature range	32–104°F / 0–40 °C (JP-W73 Ink)		
Humidity range	30–90 % R.H.(no condensation) Note: When humidity is more than 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100–120 / 200–240 V±10 % 50/60 Hz 150 VA(AC Inlet)	Print head cable length	13.1 ft / 4m
Approval	CE, UK, cUL, C-Tick	Overall size (width × depth × height)	15.7 × 12.4 × 20.3 inches 400 × 315 × 515 mm
Air supply	0.2–0.4 MPa		
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg
Dimensions			
Console		Printhead	
			

\*1. The print samples have been produced under ideal conditions. Print quality depends printing speed.

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# PXR-H for High-speed printing

The model meets high-speed printing needs on lines of electric wires, cans, etc.

### Main Features

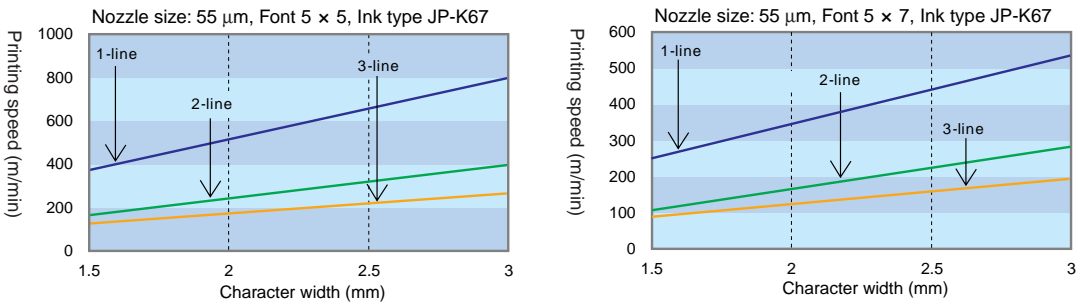
Print quality has further improved by changes of nozzle control method.  
The world top class high-speed printing is possible



### Marking Examples



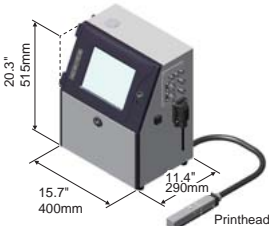
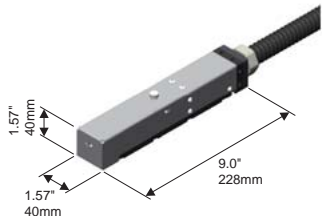
### Printing speed



### Printing Samples (Full Scale)

Font		PXR-H450W
5×5	1 LINE	0123456789ABCDEFGHIJKLMN
	2 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ
	3 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ 0123456789ABCDEFGHIJKLMN
5×7	1 LINE	0123456789ABCDEFGHIJKLMN
	2 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ
	3 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ 0123456789ABCDEFGHIJKLMN
	4 LINE	0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ 0123456789ABCDEFGHIJKLMN ABCDEFGHIJKLMN OPQRSTUVWXYZ
12×16	1 LINE	0123456789

### Standard Specifications

Printing specifications			
Model	PXR-H450W		
Nozzle size	55 μm		
Max. print line number	Up to 4 Lines		
Maximum number of print characters (each line)	1 Line: Up to 240 characters    2 Line: Up to 120 characters 3 Line: Up to 80 characters    4 Line: Up to 60 characters		
Dot matrix (horizontal × vertical)	1-4 Line: 5×8 (or 5×7), 9×8 (or 9×7) 1-3 Line:5×5 1-2 Line:7×10 1 Line: 12×16		
Character height	0.08 – 0.26 inches / 2 – 6.5 mm		
Display & input device	Display: TFT LCD (10.4 inch, color), backlight provided Input Device: Touch panel, input sound provided		
Screen language 2 language selectable:	English, Chinese, Korean, Thai, Vietnamese, German, French, Dutch, Italian, Spanish, Portuguese, Swedish, Danish, Greek, Russian, Czech, Polish, Arabic,Serbian, Turkish, Hungarian and Bulgarian available		
Maximum print rate (characters / s) (Font 5 × 5, space 1, 1 line)	Up to 3,173		
Standard characters	Alphanumeric (A–Z, a–z, 0–9), symbols (27), space: Total 90		
Number of user pattern registration	Each dot matrix 128 patterns		
Print functions	Calendar, Counter, Message storage (150 messages), Font mixture, Passwords security, Bar codes (code39, ITF, NW-7, EAN13/UPC-A, Code128/EAN128), Encoder function, Reciprocation printing, etc.		
Input signal	Print target detection, Printing stop, Reciprocative printing, Rotary encoder pulse		
Output signal	Print ready, Fault, Warnig, Print in progress or print end, Online		
Data interface	RS-232C at baud rates selectable up to 38.4 kbps		
General specifications			
Operating temperature range	32–104 °F / 0–40 °C (JP-K67, K69 Ink)		
Humidity range	30–90 % R.H. (no condensation) Note: When humidity is more than 85 %RH, please purge inside of print head by air.		
Power supply (Automatic voltage selection)	AC 100–120 / 220–240V ± 10 % 50/60 Hz 150 VA (AC Inlet)	Print head cable length	13.1 ft / 4 m
Approval	CE, UL, cUL, C-Tick	Overall size (width × depth × height)	15.7 × 12.4 × 20.3 inches 400 × 315 × 515 mm
Cabinet	Stainless Steel / IP55	Approximate weight	55 lbs / 25 kg
Dimensions			
Console		Printhead	
			

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PXR-D 65 µm

PXR-D 40 µm

PXR-D 100 µm

PXR-P 65 µm

PXR-H 55 µm

Software Options  
Application Examples

Ink Variation

IJ Printer is Applied for Large Varieties of Printing.

### Addition of print columns (Total 1,000 characters) [SOP-02]

The number of printable characters can be increased from standard 240 characters (24 items) to 1,000 characters (100 items)

Standard	240 (characters)	24 (items)
Addition	760 (characters)	76 (items)
Total	1,000 (characters)	100 (items)

### Special Communication Function A [SOP-04]

Function	Content
Output of print contents	Print content will be transmitted by serial communication when the printing is completed or on request.
Output of print completion code	Print completion code will be transmitted when the printing is completed.
Status output	The printer status will be output when any change occurs in status, or an inquiry of status is given from an external device.
Transmission of remote operation	Remote operations of start, stop, deflection voltage (ON/OFF) and fault clear are possible.
Transmission of clock initialization	Current time, calendar time control, calendar time and clock system (24/12-hour system) can be set.
Transmission of print data registration	Print data can be registered in the specified message number, and the registered print data can be recalled.

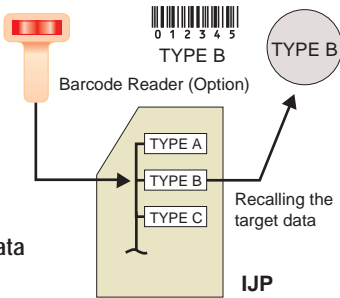
### Barcode Reader Connection [SOP-08]

#### Function for setting print contents

The contents of barcode read by the barcode reader are transmitted to IJ printer as a character string and it is set in the IJP as a print item.

#### Function for recalling print data

The contents of barcode read by the barcode reader are transmitted to IJP as a recall code and the print data that has been assigned to the code is recalled.

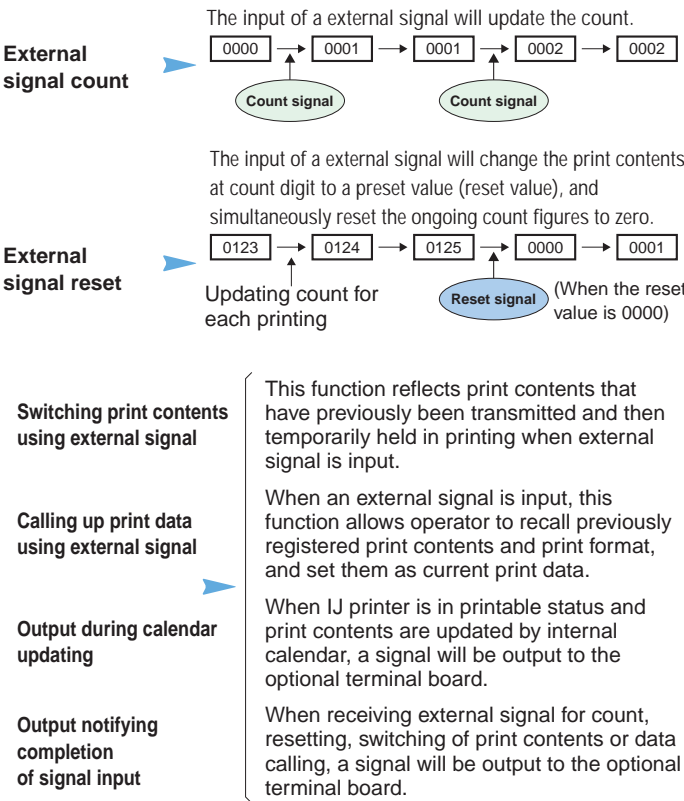


### Addition of registered data elements (Total 300 data) [SOP-03]

The number of print data can be increased from standard 150 data to 300 data.

Standard	150 data
Addition	150 data
Total	300 data

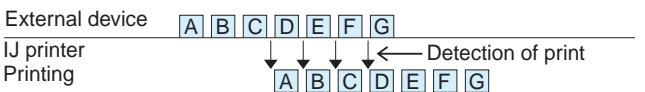
### External Signal Function A [SOP-05]



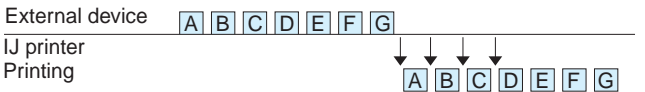
### Communication Buffer [SOP-16-03]

The print contents that are temporarily stored in the buffer are retrieved and printed one by one after the print ready status is set. The buffer capacity is 100 print items.

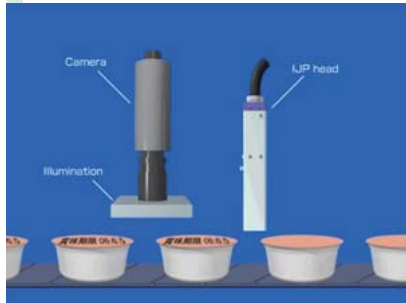
[ Example of transmitting print contents constantly during printing ]



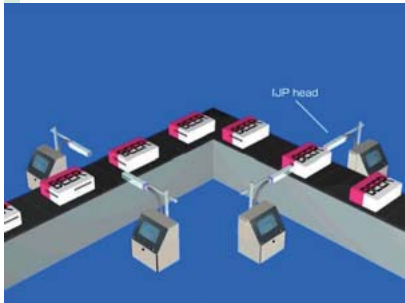
[ Example of transmitting collective print contents at the beginning ]



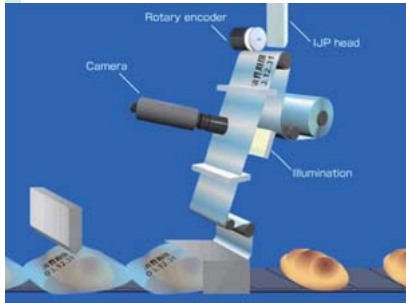
#### Cap label print inspection



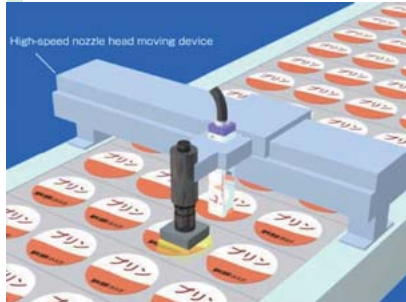
#### Paper-pack print inspection



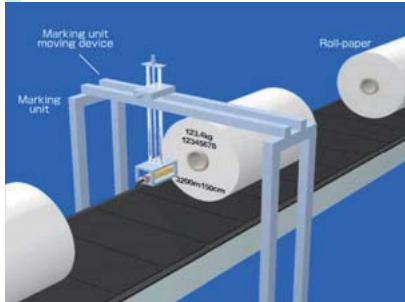
#### Film package print inspection



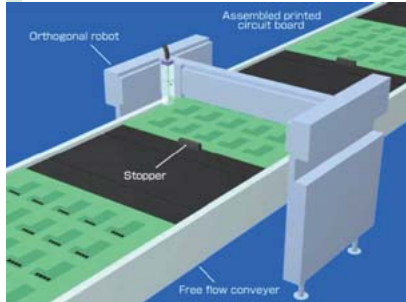
#### Traversing head automatic cup marking



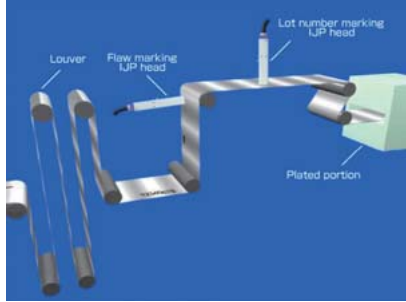
#### Roll-paper automatic marking



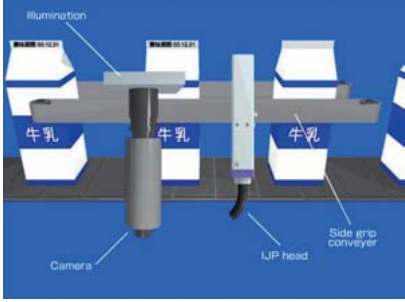
#### Assembled parts automatic marking



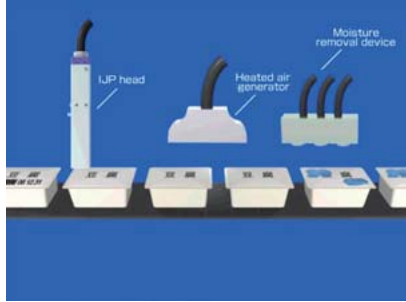
#### Steel-plate pitch print marking



#### Carton printing



#### Moisture/condensation removable printing



PXR-D 65 μm

PXR-D 40 μm

PXR-D 100 μm

PXR-P 65 μm

PXR-H 55 μm

Software Options  
Application Examples

Ink Variation



Various ink types and Color inks

All inks are based on RoHS.

Name of ink	Color	Makeup ink		Adaptable nozzle & applicable ambient temperature (☑ : Adaptable)					Drying time at 68°F/ 20°C(s)*2	Light Stability		Primary applications (Features)
		TYPE	Solvent base	PXR-D for Small Characters	PXR-D for Micro Characters	PXR-D for Larger small-size Characters	PXR-P for Pigmented Ink	PXR-H for High-speed printing		Test conditions	Result	
JP-K26	Black	TH-TYPE B	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑			1 to 5	Same as 1 year in the sunshine	No change	Steel (Alkali soluble ink)
JP-K27	Black	TH-TYPE A	MEK	32-113 °F/ 0-45 °C ☑	32-95 °F/ 0-35 °C ☑				1 to 5	Same as 1 year in the sunshine	No change	Paper, metals, plastic (Bottle, PCB, Film, etc.) Electronic parts, glass container, etc.
JP-R27	Red	TH-TYPE A	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑	1 to 5	Same as 8 months in the sunshine	Discolored but legible	
JP-B27	Blue	TH-TYPE C	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑			1 to 5	Same as 1 year in the sunshine	Discolored but legible	
JP-G27	Green	TH-TYPE A	MEK	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑			1 to 5	Same as 8 months in the sunshine	No change	
JP-K28	Black	TH-TYPE A	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Cans, PP-Sheet, PE-sheet, plastics (Retort-resistant, Wax-resistant)
JP-K60*6	Black	TH-60	Ethanol	32-95 °F/ 0-35 °C ☑					3 to 10	Same as 1 year in the sunshine	Discolored but legible	Carton, painted container, metal, etc. (Suitable for applications dislike for odor)
JP-K67	Black	TH-TYPE A	MEK	32-113 °F/ 0-45 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Paper, metals, plastic(Bottle, PCB, Film, etc.) Electronic parts, glass container, etc.
JP-K68*6	Black	TH-TYPE F	Ethanol	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-95 °F/ 0-35 °C ☑	15 to 30	Same as 1 year in the sunshine	Discolored but legible	Carton, painted container, metal, etc. (Suitable for applications dislike for odor)
JP-K69	Black	TH-69	MEK	32-113 °F/ 0-45 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Can, paper, plastic container, pipe, steel plate (Chrome-complex dye free ink)
JP-K70	Black	TH-70	MEK	32-95 °F/ 0-35 °C ☑					1 to 5	Same as 6 months in the sunshine	Discolored but legible	Glass bottles, etc. (Alkali soluble ink, Sweating resitance on glass bottle)
JP-K72	Black	TH-18	MEK	32-104 °F/ 0-40 °C ☑	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑		32-104 °F/ 0-40 °C ☑	1 to 5	Same as 1 year in the sunshine	Discolored but legible	Plastic container, etc. It is highly adhesive to plastics,especially PP.
JP-T75	Black to Blue	TH-75	2-Petanon Ethanol	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	1 to 5	Same as 2 weeks in the sunshine	Discolored but legible	Plastic, polypouches, tin-free steel, tin-plate, aluminum, glass, metal closures of various colors (Thermal sensitive ink)
JP-R76	Red	TH-76	MEK	32-95 °F/ 0-35 °C ☑					1 to 3	Same as 2 weeks in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper.
JP-K77	Black	TH-77	Acetone	59-95 °F/ 15-35 °C ☑					1	Same as 2 weeks in the sunshine	Discolored but legible	For tobacco industry
JP-E78	Red	TH-78	Ethanol	50-95 °F/ 10-35 °C ☑						Same as 2 weeks in the sunshine	Discolored but legible	Egg shell
JP-F80	Invisible	TH-80	MEK	32-95 °F/ 0-35 °C ☑					1 to 3	Same as 2 weeks in the sunshine	Reduced luminescence but legible	Glass, plastics, and most metals and coated paper (It is illuminated in ultraviolet rays after printing.)

Name of ink	Color	Makeup ink		Adaptable nozzle & applicable ambient temperature (☑ : Adaptable)					Drying time at 68°F/ 20°C(s)*2	Light Stability		Primary applications (Features)
		TYPE	Solvent base	PXR-D for Small Characters	PXR-D for Micro Characters	PXR-D for Larger small-size Characters	PXR-P for Pigmented Ink	PXR-H for High-speed printing		Test conditions	Result	
JP-K81	Black	TH-81	Acetone	32-95 °F/ 0-35 °C ☑						Same as 2 weeks in the sunshine	Discolored but legible	Untreated polyolefins such as polyethylene and polypropylene (No MEK and Methanol contains, contains low % of Volatile Organic Compound (VOC) )
JP-B82	Blue	TH-82	MEK	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	2 to 3	Same as 2 weeks in the sunshine	Discolored but legible	Returnable bottles during the Cold Fill process (Washable with caustic wash)
JP-K83	Black	TH-83	MEK	32-95 °F/ 0-35 °C ☑					*7	Same as 1 year in the sunshine	Discolored but legible	Glass, plastics, metals and coated paper (Heat curable ink, resistant to certain chemicals)
JP-K84	Black	TH-84	MEK	32-95 °F/ 0-35 °C ☑	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ☑	1 to 5	Same as 1 year in the sunshine	No change	Metal, electric wire and film (Non-migration, retort-resistant and alcohol-resistant after printing)
JP-K86	Black	TH-86	Acetone	32-95 °F/ 0-35 °C ☑				32-95 °F/ 0-35 °C ☑	0.3 to 0.6	Same as 1 year in the sunshine	No change	Glass, plastics, metals and coated paper
JP-K87	Black	TH-18	MEK	32-104 °F/ 0-40 °C ☑					1 to 5	Same as 1 year in the sunshine	No change	Glass, plastics, metals and coated paper (Resistant to Ethanol)
JP-W73	White	TH-73	MEK				32-104 °F/ 0-40 °C ☑		5 to 7	Same as 1 year in the sunshine	No change	Rubber hoses, plastic pipes, metal, glass, electric/ electronic parts, etc. (White pigment ink)
JP-W89	White	TH-73	MEK				32-104 °F/ 0-40 °C ☑		5 to 7	Same as 1 year in the sunshine	No change	Rubber hoses, plastic pipes, metal, glass, electric/ electronic parts, etc. (White pigment ink)
JP-Y91	Yellow	TH-84	MEK	32-95 °F/ 0-35 °C ☑			32-95 °F/ 0-35 °C ☑		1 to 5	Same as 1 year in the sunshine	No change	Rubber hoses, PVC pipes, metal, glass, electric/ electronic parts, etc.

\*1 MEK: Methyl Ethyl Ketone

\*2 Note that the drying speed varies depending on shapes and materials of the printing object, and environment.

\*3 Hue and adhesion of the ink should be confirmed by printing samples in advance.  
Please ask Hitachi distributor when you need the printing samples.

\*4 Please follow the law of the country when you use and dispose of the inks.

\*5 Please read the Material Safety Data Sheet (MSDS) before you use the inks.  
The MSDS can be obtained from the web site written on cover of this brochure, or inquire the nearest Hitachi distributors.

\*6 Please supply clean and dry air from the air purge connection port at the rear of the console because the ink is hygroscopic.  
Please refer to the instruction manual for details.

\*7 Requires heat curing at 300-350°F /149-177°C between 30-60 minutes to meet the solvent resistance required by the specified Military Standard.

PXR-D 65 μm

PXR-D 40 μm

PXR-D 100 μm

PXR-P 65 μm

PXR-H 55 μm

Software Options  
Application Examples

Ink Variation

## Ink and Makeup Ink Consumption

Hitachi IJ printers reduce the running cost for printing.

## Ink and makeup ink consumption

### Calculating examples (Rough indication)

$$\text{Ink quantity used by printing} = \frac{\text{Mean ink volume}}{1 \text{ ink drop}} \times \frac{\text{Mean dot number}}{1 \text{ character}} \times \frac{\text{Number of characters}}{1 \text{ print object}} \times \frac{\text{Production number}}{1 \text{ month}} \dots \textcircled{1}$$

$$\text{Makeup ink consumption by vaporization} = \frac{\text{Mean vaporizing volume of makeup ink}}{1 \text{ hour}} \times \frac{\text{Operating hours}}{1 \text{ day}} \times \frac{\text{Operating days}}{1 \text{ month}} \dots\dots\dots (2)$$

$$\text{Ink quantity for periodic replacement} = \text{Ink quantity per replacement (cm}^3\text{/replacement)} \times \frac{\text{Operation hours / day} \times \text{Operating days / month}}{\text{Ink life (hours)}} \dots\dots\dots \textcircled{3}$$

[Note]

Above calculations are an estimate based on ambient temperature of 20°C

Ink quantity for periodic replacement is a case when the operating hours is more than 200 hours.

In case the operating hour is less than 200 hours, please use following formula to calculate the ink quantity for periodic replacement.

$$\text{Ink quantity for periodic replacement} = \text{Ink quantity per replacement (cm}^3\text{/replacement)} \times \frac{200 \text{ (hour/month)}}{\text{Ink life (hours)}}$$

Example 65  $\mu\text{m}$  nozzle, JP-K67 ink, 8 characters/printing, 5  $\times$  7 font, 6M pcs/month, 16 hours/day, 25 days/month operation

$$\begin{aligned} &= \textcircled{1} + \textcircled{3} = [ 8.3 \times 10^{-7}(\text{ cm}^3 / \text{ dot}) \times 15(\text{ dots / character}) \times 8(\text{ characters / pcs}) \times 6 \times 10^6(\text{ pcs / month}) ] \\ &+ 400(\text{ cm}^3) \times \frac{16\text{hours / day} \times 25(\text{ days / month})}{1\,200\text{hours}} \\ &598(\text{ cm}^3 / \text{ month}) + 134(\text{ cm}^3 / \text{ month}) \quad 732(\text{ cm}^3 / \text{ month}) \end{aligned}$$

Makeup ink consumption by Evaporation = ② + ( Ink quantity for printhead cleaning )  
 = 5( cm<sup>3</sup> / hour ) × 16( hours / day ) × 25( days / month ) + ( Ink quantity for printhead cleaning )  
 = 2,000( cm<sup>3</sup> / month ) + ( Ink quantity for printhead cleaning )

Mean ink drop volume of each nozzle diameter

Nozzle diameter ( $\mu\text{m}$ )	40	55	65	100
Mean ink volume ( $\text{cm}^3/\text{dot}$ )	$2.8 \times 10^{-7}$	$5.3 \times 10^{-7}$	$8.3 \times 10^{-7}$	$3.4 \times 10^{-6}$

Mean dot number of each alpha numeric font

Font	5×5	5×7,5×8	7×10	9×7	12×16	18×24	24×32
Mean dot number/character	11	15	23	15	78	154	288

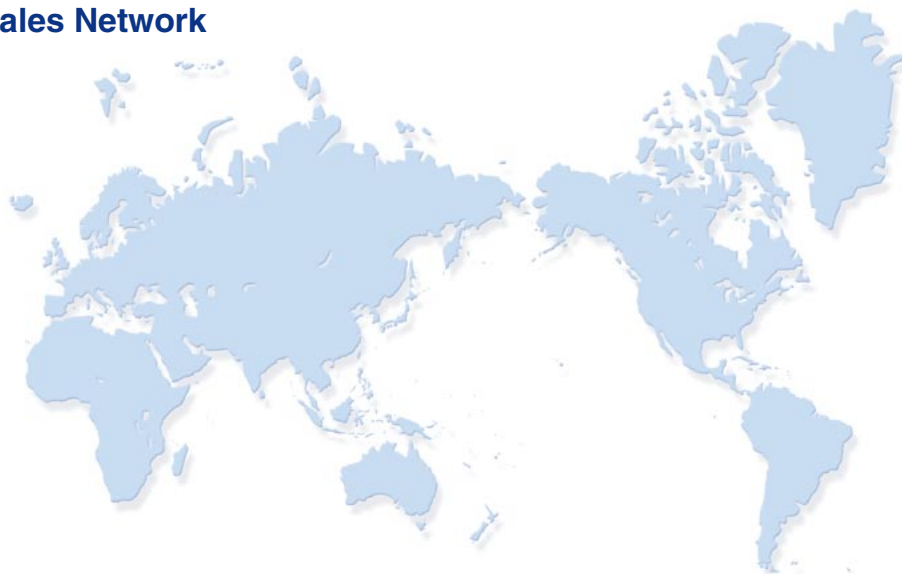
# MEMO



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